Natural Gas Market Prices Monthly Update

August 1, 2003

NATURAL GAS MARKET PRICE SPIKE UPDATE

Summary

On March 13, 2003, Governor Davis asked the California Energy Commission (Energy Commission) and the California Public Utilities Commission (CPUC) to review the unexpectedly rapid rise in natural gas market prices that occurred in late February 2003. He also asked that the two Commissions issue a report to his office and provide a monthly update of any additional findings. This report provides an update for August 2003.

Since the first report was issued on March 28, 2003, the Energy Commission and CPUC have examined additional information on market conditions during February and March 2003 and the California utilities' activities during this period, and have discussed these findings with the Federal Energy Regulatory Commission (FERC) staff.

This update summarizes the FERC staff report on the February 2003 market price spike events, issued in July 2003, updates our information on the natural gas storage inventory levels, summarizes the recently issued U.S. Department of Energy/Energy Information Administration (EIA) July 2003 *Short-Term Energy Outlook*, and provides an analysis of the recently completed Kern River Expansion Project. In the last section, we note that the U.S. Secretary of Energy recognized the need to increase investments in energy efficiency and conservation in a letter to CPUC President Peevey. The Energy Commission re-iterated the message in a press release urging California to continue using energy efficiency and conservation to alleviate any possible short-term supply constraints.

The following sections provide more detail on these issues.

FERC Price Spike Report

On July 23, 2003, the FERC staff released its *Report on the Natural Gas Price Spike of February 2003*, which is available on the FERC's website at [http://www.ferc.gov/home/Joint-CFTC-FERC-Price-Spike-07-23-03.pdf]. The FERC had assigned an investigation team to determine the causes of the sudden spike in nationwide natural gas prices during late February 2003. The team was also to investigate and report whether market manipulation was a factor in the price spike.

Based on its investigation, the FERC staff concluded that the rapid increase in natural gas prices nationwide during late February 2003 was caused by fundamental issues of supply and demand. A cold front across the eastern half of the U.S. increased heating demand for a large portion of the nation's natural gas market. In addition, by February, storage inventories in the East were much lower than normal because of heavy withdrawals during the unusually cold winter in the eastern half of the country. Low inventories not only reduced the amount of gas available to meet the rising demand, they also affected the deliverability of what gas remained in storage. The cold front also hit production areas in the Mid-continent, causing gas wells to freeze, further limiting

supplies of natural gas. Combined, these factors caused higher nationwide natural gas prices temporarily until weather patterns moderated.

The report states that the price increases were more acute in some parts of the country, particularly the Northeast and Midwest, because regional pipeline constraints limited the flow of supplies to areas of high demand. The FERC notes that extreme weather and infrastructure constraints were not factors in California and the West, but price movements in those areas reflected price movements at supply areas. The FERC's report directs readers to the Energy Commission/CPUC's March 28, 2003 report for further information regarding the effects of the price spike in California.

In terms of market behavior, the FERC staff collected an extensive sample of transaction data from late February and interviewed market participants to determine if market manipulation played a role in the precipitous rise in prices. Analysis of this information led the FERC to conclude that there was no evidence that market manipulation contributed to the price spike.

These findings are consistent with observations made by the Energy Commission and CPUC staffs in the March 28, 2003 *Natural Gas Market Prices* report.

Natural Gas Storage Inventories

The FERC staff report highlights that natural gas storage needs to be at adequate levels for winter 2003-2004. The Energy Commission and CPUC staffs have monitored storage levels closely for the past few years and will continue to do so. Fortunately, California is better prepared for the winter than the rest of the U.S. and will likely achieve its target storage levels by November 1, 2003.

Maintaining adequate inventories is a key to providing flexibility for gas buyers and sellers to balance supply and demand and for a stable and reliable supply. Adequate storage buffers volatile price movements in the market place by providing additional supplies to gas buyers.

As detailed in the earlier Energy Commission/CPUC reports and the FERC staff report, entering this winter with adequate storage inventories would reduce the likelihood of price spikes in early 2004.

The Energy Commission estimates that 153 billion cubic feet (Bcf) of inventories provides the minimum needed to serve core customers, a level needed by November 1 of each year. As of August 1, 2003 California storage inventories were at 186 Bcf. Figure 1 shows the recent advances in California storage inventories. To satisfy demand for this upcoming winter, California storage customers have injected about 90 Bcf since April 1, 2003, the traditional date to begin refilling storage facilities. As a result, storage inventories are well on their way to the maximum level of 243 Bcf.

Figure 1

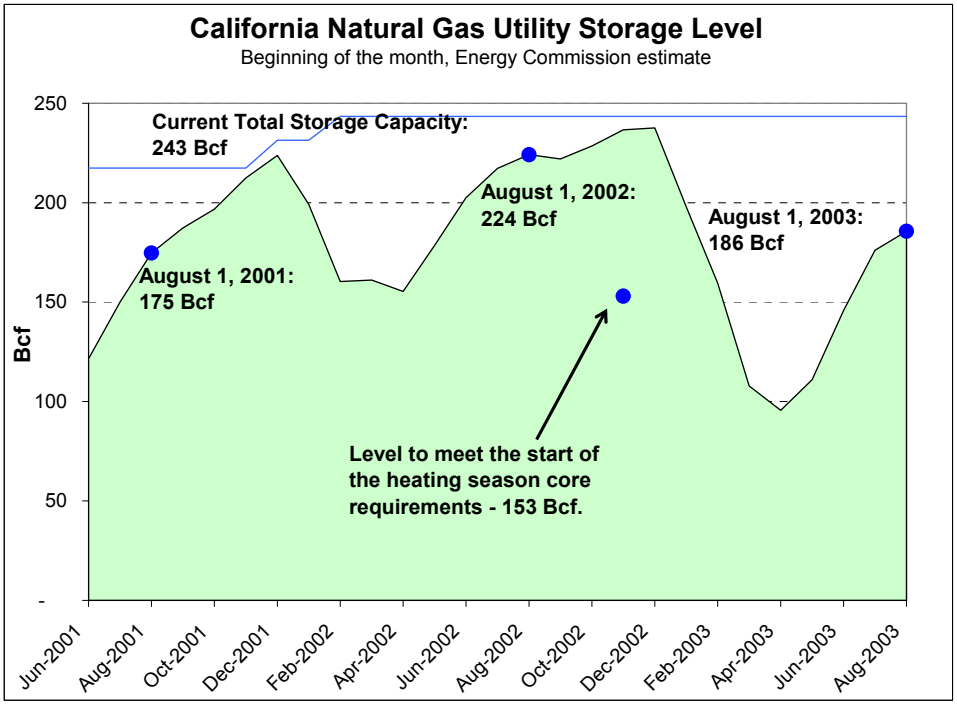
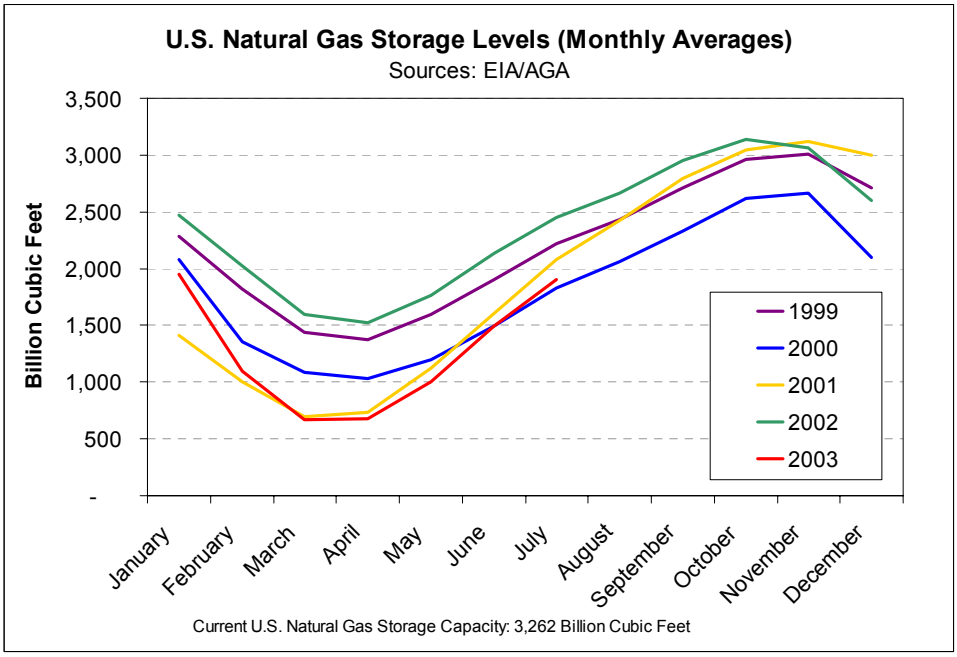


Figure 2 compares weekly storage levels in the U.S. during the past four and one-half years. While U.S. storage inventories are still well below needed levels, utilities, and storage customers are continuing to inject gas into storage at a rapid rate. Most analysts believe that 3.0 trillion cubic feet (Tcf) in storage inventories provide a comfortable buffer for winter peak demand.

Figure 2



On July 25, 2003, 2,032 Bcf was registered in U.S. storage facilities. For comparison, the same time a year ago, inventories were 2,534 Bcf, and the five-year-average for this time is 2,289 Bcf.

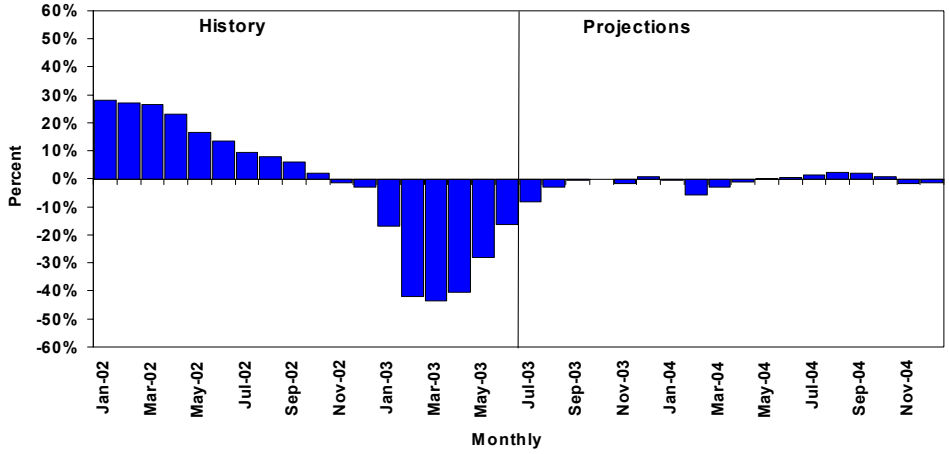
Unfortunately, the natural gas injected now is more expensive than in previous years, which raises concerns that consumers' prices for the 2003-2004 winter will remain high, as the stored gas is withdrawn and used or sold. Despite these higher prices, storage inventories remain an important way for utilities to maintain reliable deliveries to customers and mitigate the potential for extreme price spikes in the coming winter.

U.S. EIA July *Short-Term Energy Outlook*

On July 8, 2003, the EIA published its *Short-Term Energy Outlook*, presenting its expectations of natural gas storage, drilling activity, demand, and spot prices for this winter. Interestingly, EIA forecasts the following key points:

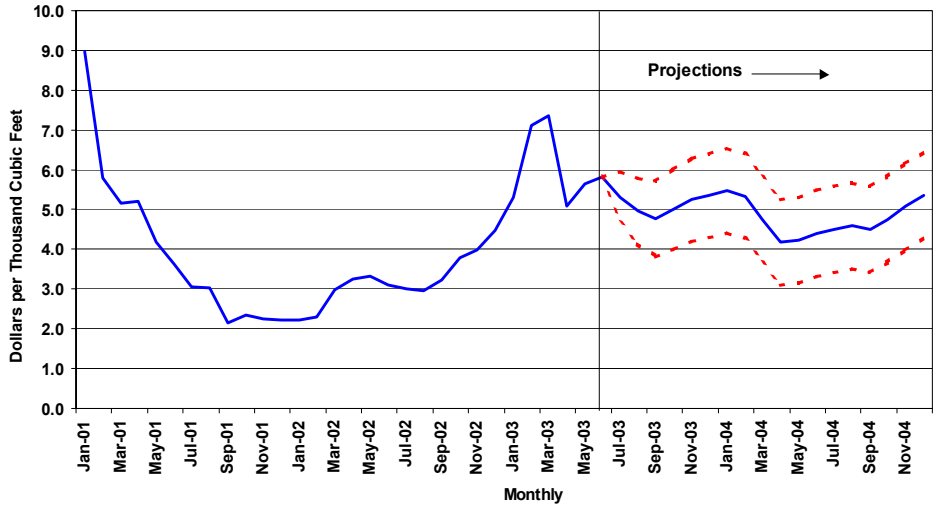
- Total gas in storage will be very close to the five-year average through 2004 (Figure 3).
- Gas drilling activity will increase as current prices provide an incentive for additional production, then drilling activity will decline in 2004.
- Total gas demand growth for 2003 will be slightly negative and slightly positive (although less than 1 percent) for 2004, due mainly to higher electricity generation demand.
- Price will gradually decline, with several bumps along the way, until March 2004, as a result of reduced demand and increased new supply (Figure 4).

Figure 3
Gas In Storage
(Difference from Previous 5-Year Average)



Sources: History: EIA; Projections: Short-Term Energy Outlook, July 2003.

Figure 4
Natural Gas Spot Prices at Henry Hub, Louisiana
(Base Case and 95% Confidence Interval*)



Sources: History: EIA's *Natural Gas Week*; Projections: *Short-Term Energy Outlook*, July 2003.
** The confidence intervals show +/- 2 standard errors based on the properties of the model. The ranges do not include the effects of major supply disruptions*

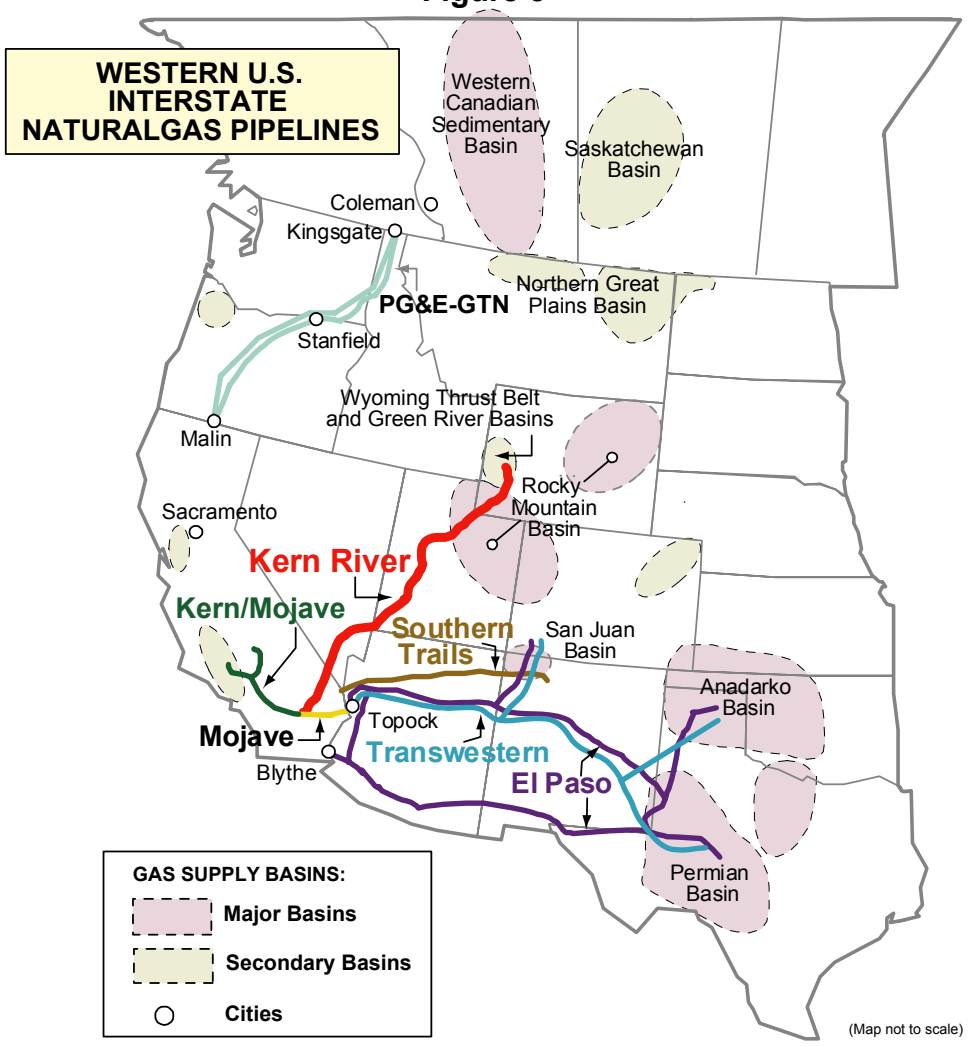
With its expectation of healthy storage levels, the EIA anticipates natural gas spot prices will not spike as they did in February 2003. Thus, the overall forecast is not the bleak picture many independent analysts predicted earlier. National market prices, however, are projected to remain above average compared to recent years.

Kern River Expansion Project

In the March 28, 2003 *Natural Gas Market Prices* report, the Energy Commission and the CPUC identified natural gas infrastructure improvements needed to assure that California has a reliable supply of natural gas at reasonable prices. Infrastructure improvements allow buyers and sellers to move lower-cost gas from supply regions, like the Rocky Mountains to California.

On May 1, 2003, the Kern River Gas Transmission Company placed its recently completed 2003 Expansion Project into service. The 906 million cubic feet per day (MMcf/d) expansion more than doubled the capacity on the Kern River Pipeline, which carries natural gas from the Rocky Mountain gas-producing regions to California. (see Figure 5 for location)

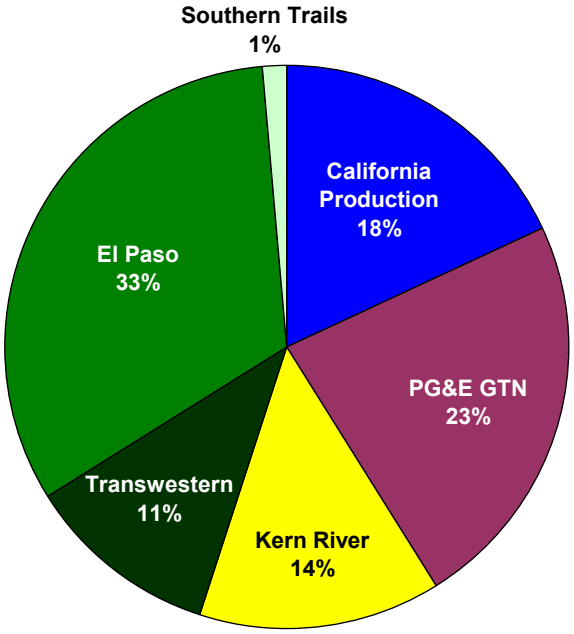
Figure 5



This additional capacity on the Kern River Pipeline was quickly put to use, reaching 95 percent capacity on its first day in operation, and has operated near capacity ever since. With a new capacity of more than 1,700 MMcf/d, the expanded Kern River Pipeline brings Rocky Mountain natural gas supplies on par with the Southwest and Canada as California's main sources of natural gas.

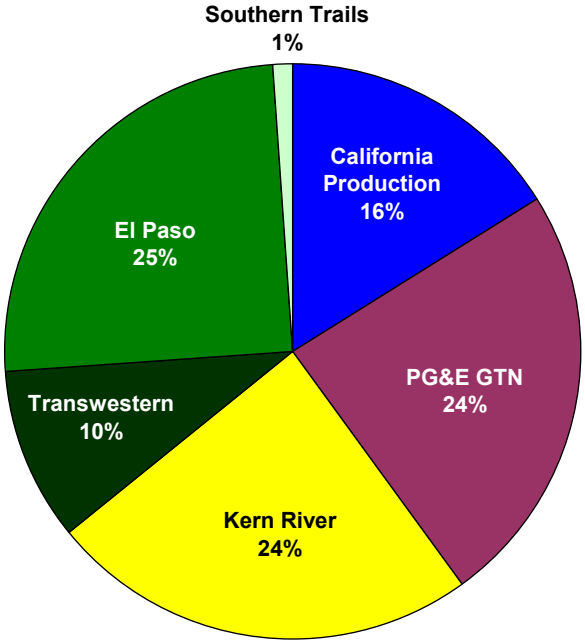
Figure 6 illustrates the sources of natural gas serving California prior to the Kern River pipeline expansion (January 1, 2003 to April 30, 2003). Before the project was completed, the Kern River Pipeline provided 14 percent of the state's natural gas supplies, comparable to the amount of gas produced in California. Figure 7 shows how the Kern River Pipeline has gained a greater proportion of California's gas supplies. Since May 1, 2003, deliveries on the Kern River Pipeline represent a 24 percent share. These deliveries are equal to those on PG&E-GTN, which delivers Canadian gas, (24 percent) and the El Paso Natural Gas pipeline, which delivers gas from the Southwest (25 percent).

Figure 6
California's Natural Gas Supply Sources, January 1 – April 30, 2003



Sources: GLJ Energy Publications, Inc., Southern California Gas Company, PG&E

Figure 7
California's Natural Gas Supply Sources, May 1, 2003 – Present

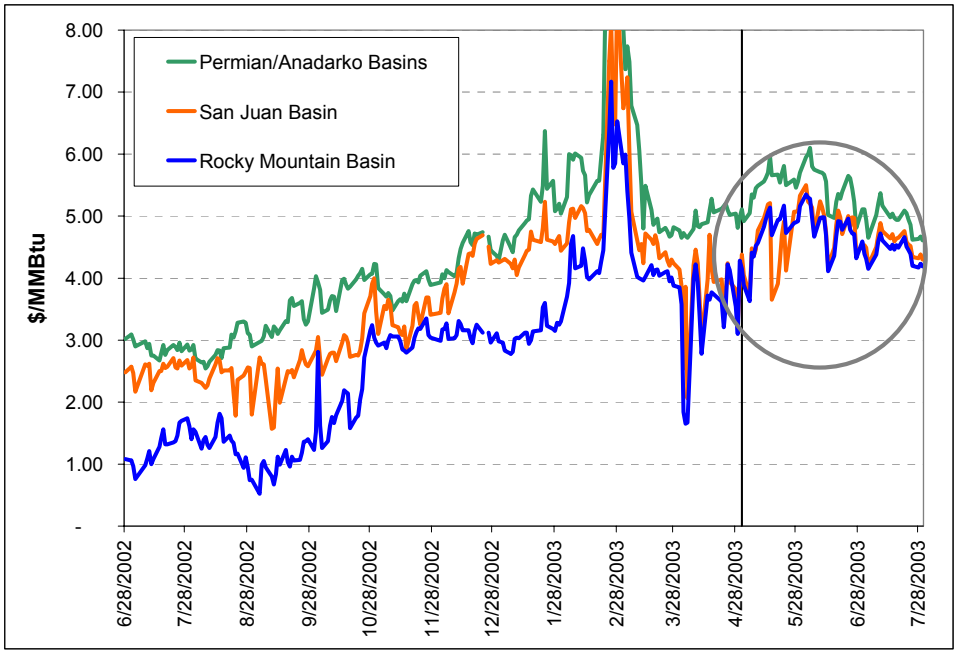


Sources: GLJ Energy Publications, Inc., Southern California Gas Company, PG&E

Increasing gas deliveries from the Rocky Mountains has allowed California consumers to supplant relatively expensive Southwestern gas with less costly supplies.

Historically, prices in the Rocky Mountain basin have been lower than other supply regions, in part, because producers in the Rocky Mountain basin had limited access to large, out-of-state markets. Figure 8 shows the daily-average spot market prices during the past year in the Permian/Anadarko, San Juan, and Rocky Mountain basins, which are Southern California's major out-of-state natural gas supply sources.

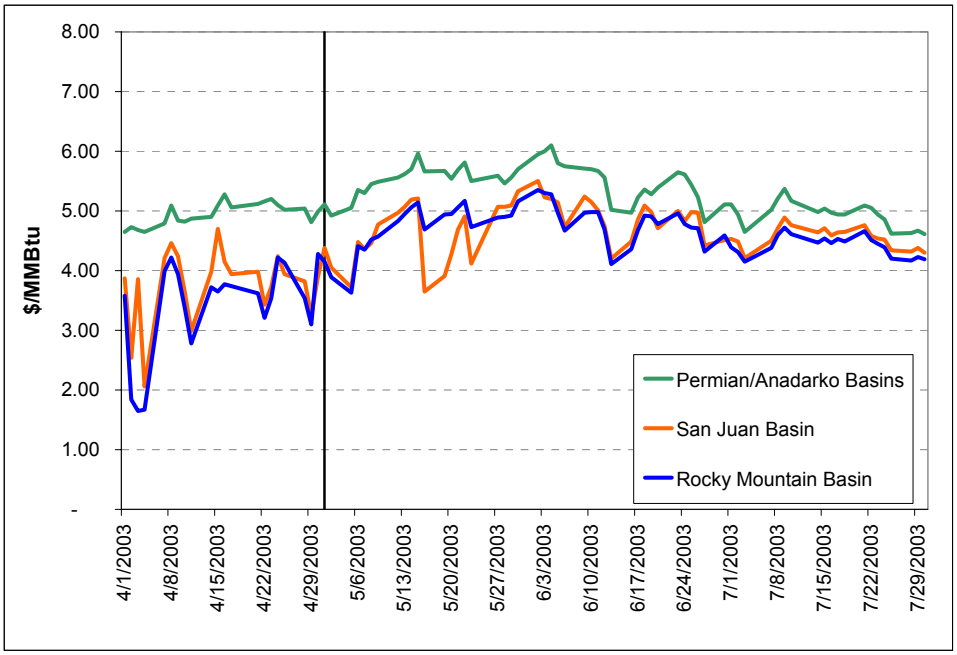
Figure 8
Average Daily Spot Market Prices



Source: Natural Gas Intelligence, Daily Gas Price Index

Figure 9 isolates the spot market prices for gas from these three production areas on the days preceding and following May 1, 2003, when the Kern River Expansion project came into service. The project allowed Rocky Mountain producers to deliver more supplies to markets in Utah, Nevada, and California. When consumers began to take more gas, spot market prices in the Rocky Mountain region increased relative to prices in the Southwestern production basins. Although the price difference between the Rockies and the Southwestern areas has narrowed, Rocky Mountain gas remains less expensive.

Figure 9
Average Daily Spot Market Prices (April 1, 2003 – Present)



Source: Natural Gas Intelligence, Daily Gas Price Index

Spot market prices at the Southern California border, however, did not drop after May 1, 2003 because other influences, including weather, constraints on other pipelines, and upstream demand, negated the effect that the Kern River Pipeline expansion had on prices overall. However, with the additional Rocky Mountain supplies now available, natural gas prices in California are likely to drop, relative to prices before the expansion project came into service.

Additionally, the Kern River Gas Transmission Company's final debt refinancing made the project less expensive than originally estimated. As a result, the company filed a request with the FERC to reduce its rates for 2003 Expansion Project customers. Once approved, the rate reductions would be retroactive to May 1, 2003, possibly lowering prices for Kern River pipeline customers in California.

According to the Energy Commission staff report, *Preliminary Natural Gas Market Assessment,* published in May 2003, demand for gas from the Rocky Mountains will grow to 1,986 MMcf/d by 2008 and 2,288 MMcf/d by 2013, due primarily to its price advantage over Southwestern gas. By 2008, this level of demand could exceed the Kern River Pipeline's current delivery capacity by 255 MMcf/d, and within a decade, demand may exceed delivery capacity by 557 MMcf/d.

The Kern River Gas Transmission Company estimates that it could economically expand the Kern River Pipeline by an additional 500 MMcf/d. The Energy Commission's report suggests this expansion would be sufficient to meet California's gas needs from the Rocky Mountains for the next decade. If economical, a competing pipeline could supply California with gas supplies from the Rockies.

U.S. Secretary of Energy Call for Energy Efficiency

As reported in the July 2003 *Natural Gas Market Prices Monthly Update*, U.S. Secretary of Energy Abraham expressed concerns about the nation's natural gas supply and demand outlook, with the potential for this winter's gas prices to reach winter 2002-2003 levels. After initially focusing on the supply side, the Secretary has now issued a "call to arms" for energy efficiency and conservation (see ATTACHMENT A for the July 17, 2003 letter). The Secretary urged public utility commissioners and state energy officials throughout the nation to help their states conserve natural gas, with his letter outlining specific steps that the states should take.

California, however, has been taking these steps for many years, demonstrating that energy efficiency and conservation are cost effective and quality-of-life enhancing. Perhaps most importantly, conservation and energy efficiency actions are much more effective in addressing a short-term supply and demand imbalance than are supply-oriented actions.

We expect that the Department of Energy will continue to fund and support these types of measures in the future.

On July 17, 2003, the Energy Commission and the CPUC staff made an integrated presentation on natural gas issues to a joint special meeting of the Energy Commission, CPUC, and the California Power Authority[1]. The presentation emphasized the need to make energy efficiency and conservation a top priority to help maintain an adequate balance between natural gas supply and demand while ensuring a reliable supply at reasonable prices.

The following day, the Energy Commission issued a press release calling for increasing our efforts to use natural gas and electricity efficiently, see ATTACHMENT B. (Also available at the Energy Commission's website: [http://www.energy.ca.gov/releases/2003_releases/2003-07-18_conserve_natgas.html]). In this regard, both state and federal officials are sending a consistent message to consumers: energy efficiency and conservation are the most effective way to manage a short-term imbalance between natural gas supply and demand.

In summary, California's natural gas outlook continues to improve compared to earlier expectations, primarily due to significant efforts to increase storage inventories. At this point, we have a diminished concern for supply reliability, but still harbor concerns about high natural gas prices. We will report any significant emerging issues in the next *Energy Commission/CPUC Natural Market Report*.

[1] The purpose of this special meeting was to discuss the agencies' Energy Action Plan (copy of the Plan and presentation are available at, http://www.energy.ca.gov/2003_energy_action_plan/index.htm).

ATTACHMENT A
Department of Energy Letter

The Secretary of Energy
Washington, DC 20585

July 17, 2003

RECEIVED
JUL 22 2003
Commissioner PEEVEY'S OFFICE

Michael R. Peevey
Commissioner
California Public Utilities Commission
505 Van Ness Ave.
San Francisco, CA 94102

Dear Commissioner Peevey:

The Nation is currently facing difficult price and supply issues with natural gas. I am writing to update you about this situation, to inform you of actions the Administration is taking, and to offer several recommendations for State actions to address this important national energy issue.

As you know, the President's National Energy Policy (NEP) emphasizes the need for a diverse energy mix to strengthen our energy security. Natural gas has long been regarded as a cheap and abundant energy source in this country, but that outlook is changing. The NEP recognized the advantages of greater fuel diversity and included recommendations to the Congress to ensure that America will have reliable and affordable sources of energy. Most of the recommendations that required Administration action are in the process of being implemented.

The Energy Information Administration (EIA) has indicated that the Nation's stocks of natural gas in underground storage are unusually low due to weather factors and declines in both domestic production and new imports. Fortunately, the industry is responding by increasing storage stocks, as indicated by recent record storage injection. Nevertheless, a hot summer could increase the use of gas for electricity generation and hamper efforts to rebuild storage levels adequately before next winter. EIA forecasts that natural gas prices will average $5.00 to $6.00 per million Btu for the remainder of the year but ease slightly in 2004. Last year at this time, natural gas prices were averaging $3.32 per million Btu.

Responding to indications of a supply/demand imbalance in March, 2002, I asked the National Petroleum Council (NPC) to conduct a comprehensive study of natural gas in the United States during the 21st Century. The NPC will deliver its report this fall. In my view, we cannot wait until the study is complete to take action on the more immediate problems we face. Recently, the Department of Energy and the National Petroleum Council hosted a Natural Gas Summit. The event was attended by State and Federal regulators; industrial, residential, and commercial gas consumers; electric utilities and independent generators; along with experts in energy efficiency and conservation. The attendees discussed problems and solutions and identified some actions that can be taken immediately to ease short-term supply constraints.

regulators; industrial, residential, and commercial gas consumers; electric utilities and independent generators; along with experts in energy efficiency and conservation. The attendees discussed problems and solutions and identified some actions that can be taken immediately to ease short-term supply constraints.

There are only limited opportunities to increase supply over the next 12 to 18 months; therefore, the emphasis must be on conservation, energy efficiency, and fuel switching. A number of areas for potential State action were discussed at the Summit, including:

(1) *Increased emphasis on existing gas and electric utility programs to improve consumers' energy efficiency and demand response* -- In recent years funding and policy support for these programs have lagged in some States. I urge you to work with gas and electric utilities, the Governor, and State legislature if appropriate, to revisit the level of these programs and ensure that they are implemented aggressively.

(2) *Information and education campaigns on electric and gas conservation opportunities* -- Consider having your State develop such campaigns to show how consumers can act now to hold down future gas and electric bills. Almost all consumers can find some simple and cheap actions to take now that will improve the weatherization of their homes for summer and winter conditions.

(3) *Using more efficient power sources* -- During times of high natural gas prices, it is more important than ever to utilize the most efficient generating facilities possible in order to reduce gas usage. Dispatching power plants on a regional basis will encourage the use of lower cost fuel sources and ensure that the gas plants that operate are the most efficient combined cycle plants available. Combined cycle plants generate electricity much more efficiently and consume substantially less natural gas per kilowatt hour of output.

Utilities that recognize this and are able to purchase electricity from combined cycle plants will reduce their purchased power costs and cushion the impact of higher natural gas prices on their electricity ratepayers. Further, by switching their power purchasing to cleaner, more efficient power plants, utilities will help decrease overall natural gas consumption and reduce pollution. Public Utilities Commissions (PUCs) should work with State-regulated utilities to ensure that ratepayers benefit from the economic and environmental benefits of natural gas combined cycle power generation.

(4) *Infrastructure expansion* -- As the demand for natural gas increases, there will be a continuing need to significantly expand natural gas infrastructure to meet the energy needs of our country. I encourage you to ensure that unnecessary regulatory delays are not having a detrimental effect on our ability to bring additional gas to markets.

(5) *Specific Public Utility Commission actions* -- The Department of Energy understands that most State PUCs and gas companies, in their attempt to protect consumers, are traditionally required to review and closely monitor the provider's costs are passed along in the form of higher energy bills to ratepayers.

Several options for PUC consideration to reduce consumers' gas bills during the heating season, when, for most ratepayers, gas consumption is at its peak level, were discussed. Although they may require legislative authority and major Commission actions, you may want to consider:

- Cost recovery mechanisms to effectively balance the objectives of low gas cost and low price risk;
- Customer options for levelized/budget billing plans; and
- "Price stability" regulatory tools that allow local distributor companies (LDCs) to execute longer-term gas contracts and/or hedging.

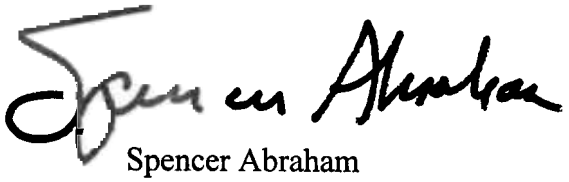
Working together we can address these problems to make the necessary improvements that will continue our economic recovery as well as ensure the reliability of energy service throughout our Nation.

In addition to the recommendations listed above, the Department of Energy, in its effort to implement the NEP, is in the process of developing initiatives to provide the American people with valuable tips about how to save and conserve energy. One important element of that campaign is to provide more consumer-oriented information. For this reason, the Department has created its Energy Savers web page: www.energysavers.gov.

We invite you and your staff to visit this site and help spread the conservation message by providing a hyperlink to Energy Savers on your webpage.

Please find enclosed a copy of my remarks to the attendees of the Natural Gas Summit. If you require further information, please feel free to contact me or Mr. Herb M. Jones, Deputy Assistant Secretary for Intergovernmental Affairs, at (202) 586-5450.

Sincerely,



Spencer Abraham

Enclosure

ATTACHMENT B
Energy Commission Press Release

For immediate release: July 18, 2003
Media Contact: Claudia Chandler - 916-654-4989

State Urges Energy Conservation to Shore Up Winter Supplies of Natural Gas

Sacramento - Save electricity this summer and help stash away natural gas for the winter, urges the California Energy Commission.

"Power plants consume nearly 40 percent of natural gas used in California," says Energy Commissioner James D. Boyd. "By using electricity efficiently this summer, Californians will have more natural gas available for the coming winter's heating season." Boyd stressed that consuming more natural gas as power plant fuel in the summer means having less gas available in the winter, which could mean higher prices for consumers.

One of the keys to meeting the State's winter heating needs and reducing potential price volatility is adequate natural gas storage. The amount of natural gas in underground storage in California is 19 percent below last year's level. "While inventories are not as low as they were in 2001, it is a cause for concern," Boyd emphasized.

Boyd pointed to energy efficiency and conservation as the best alternative for reducing natural gas consumption in the short-term. In the longer-term, he advocates more efficient use of natural gas storage facilities in conjunction with the construction of additional pipeline capacity and facilities to receive additional imports. Boyd also favors an increase in the development of renewable energy for electricity generation to reduce the State's reliance on natural gas. About 85 percent of natural gas used by Californians come from other states and countries.

The Commissioner leads the Governor's Natural Gas Working Group. The group has helped streamline the permitting process for critical natural gas infrastructure projects to insure they were on-line to help meet both summer and winter peak demands. This same group has convened a committee of all state agencies who would potentially be involved in permitting liquefied natural gas (LNG) facilities in California. The group will address, in advance, potential safety, jurisdiction, and communication-coordination issues.

As noted in Thursday's joint meeting of the California Energy Commission, the Power Authority and the Public Utilities Commission, one of the six tenets of the State's Energy Action Plan addresses the need to ensure reliable supply of reasonably priced natural gas. The plan adopted by the three agencies, also calls out the need for energy efficiency as California's number one priority for financial investments.

Energy-Saving Tips:

- Set the air conditioner at 78 degrees or higher and at 85 degrees when you're away.
- Turn off ventilating fans when not in use.
- Use your clothes dryer and oven during the early morning hours or late at night.
- Serve more cold meals during hot days.
- Remove sediment that lowers the efficiency of your water by draining a quart of water from

your water heater every three months.

- Install attic ventilation.
- Make sure your home is properly insulated.
- Clean or replace your heating and air conditioning filters every month.
- Install an insulating wrap for your water heater. Be careful not to block vents or controls.
- Buy the most energy efficient appliances by looking for the Energy Star label.

For more energy-saving tips, click on:

http://www.consumerenergycenter.org/

# # #